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COMMISSIONERS

EX PARTE OR LATE FILED

January 20, 1998

Ms. Magalie Roman Salas
Secretary
Federal Communications Commission
1919 M Street, N.W., Room 222
Washington, DC 20554

Re: *EX PARTE* MEETING, CC DOCKET 96-45, FEDERAL-STATE JOINT BOARD ON UNIVERSAL SERVICE - PROXY COST MODELS

Dear Ms. Salas:

On January 15 and 16th, Joel Shifman and Peter Bluhm of the Maine Public Utilities Commission and the Vermont Public Service Board, respectively, participated in discussions with staff members of the Federal Communications Commission. At that meeting, they discussed a paper produced by an Ad Hoc Staff Group which developed an alternative distribution proposal for high cost support and some loop sample data that was developed in a Maine docket. Ten copies of that paper and the loop sample data are enclosed for your reference.

If you have any questions or require additional information, please feel free to call me at (207)287-1381.

Sincerely,

Joel Shifman

JS/llp
Enclosure

PHONE: (207) 287-3831 (Voice)
FAX: (207) 287-1039

BEFORE THE FEDERAL COMMUNICATIONS COMMISSION

WASHINGTON, D.C. 20554

In the Matter of	)	
	)	CC Docket No. 96-45
Federal-State Joint Board on	)	
Universal Service	)	
	)	

CERTIFICATE OF SERVICE

I HEREBY CERTIFY that a true and correct copy of the foregoing documents have been furnished to the parties on the attached service list.

Joel B. Shifman, Esquire
Maine Public Utilities Commission
242 State Street
Augusta, Maine 04333-0018

HIGH COST SUPPORT:

AN ALTERNATIVE DISTRIBUTION PROPOSAL

Prepared by the

NARUC Ad Hoc Working Group

on Funding for High Cost Areas

Printed on: January 15, 1998

EXECUTIVE SUMMARY

Representatives of low and high cost states, local exchange carriers large and small, and other industry participants have worked over the past six months to develop an approach to funding for high cost areas that satisfies both the Telecommunications Act of 1996 (Telecom Act) and their legitimate and diverse interests. The resulting proposal is a reasoned compromise that, if adopted, will satisfy the goal of the Telecom Act to ensure reasonably comparable rates for high cost areas of the country without creating an unduly large burden on cost in low cost areas. The key elements in the proposal are: 1) that funds should flow from state to state only to the extent that a state is unable, by balancing high and low cost areas within its boundaries, to achieve average cost levels consistent with the national average; 2) that current support levels for rural companies are maintained to avoid near-term disruption for rural companies; and 3) that the impact of anomalies in cost data is moderated by basing support on the lesser of embedded or forward-looking state average costs, with a provision to accommodate states that require rapid replacement of older infrastructure. These elements, taken together, require a fund of modest size (under $2 billion nationwide using current cost estimates) and provide sufficient additional support that high cost states can satisfy their obligations under the Telecom Act.

Perhaps the most important benefit of the proposal, however, is that, because it is the product of extensive negotiation and give and take, its adoption will minimize the degree to which litigation will dominate the Universal Service Fund landscape. High cost states supporting the proposal would give up the opportunity to claim that, under the Telecom Act, far greater federal funding is required; low cost states, for their part, would give up the opportunity to claim in court that any obligation is too great.

Six fundamental principles, subsequently endorsed by NARUC, guided the development of the proposal:

> The principal purpose of federal high cost support is to maintain reasonably comparable intrastate rates, and not to reduce interstate access charges.
>
> Consumers in rural, insular and high cost areas should have access to a similar spectrum of telecommunications services as consumers in urban areas, at rates that are reasonably comparable to rates charged for similar services in urban areas.
>
> Federal support can be based upon cost differences between high-cost and low-cost areas.

Federal support for high cost areas must be compatible with the method of separating costs and revenues between interstate and intrastate jurisdictions.

The federal support mechanism for high cost areas should afford maximum respect to the duty of state commissions to set rates for intrastate services.

Collection and distribution of high cost support should be competitively neutral.

In addition, several other principles are also reflected in the proposal. These are endorsed as a whole, but not necessarily as stand-alone principles.

Revenues for the federal high cost support program should be derived from a charge on only the interstate revenues of interstate carriers.

The federal high cost support program should be as small as possible.

A single federal support program should apply to both rural and non-rural companies, without regard to their size. A single federal support program should also cover both loop costs and switch costs.

States differ significantly in their average costs, due primarily to differences in the mixture of high-cost and low-cost lines.

The Telecom Act requires that rates in rural areas be "reasonably comparable" to rates in urban areas elsewhere in the country. National average costs are an acceptable definition of costs that are reasonably comparable to urban costs.

Federal support can be calculated assuming that states will also generate support to minimize differences within the state. Federal support will be sufficient if it ensures that each state can achieve rates no higher than the national average.

Because of separations, federal support can be reduced by the costs that are otherwise recovered in the interstate jurisdiction.

Federal support of high cost areas should be based upon the lesser of forward-looking and embedded costs, but should not be less than the funding available from existing support systems.

Federal support should be distributed to state commissions. States may then further distribute those funds to Eligible Telecommunication Carriers in a manner that supports universal service in high cost areas, but that does not decrease existing support.

To satisfy these principles, the proposal would calculate and distribute high cost fund support using the following sequence:

1. Using forward-looking cost models, calculate the difference between each state's average cost and the national average.

2. Using reported embedded costs of incumbent carriers, calculate the difference between each state's average (embedded) cost and the national average.

3. For each state, take the lesser of the amounts from step 1 and step 2. This is the minimum amount of federal support for each state.

4. Calculate the support that each state would receive under existing support systems (i.e., support for loops and switches). Federal support under the proposal is the greater of this "hold-harmless" amount and the amount from step 3.

5. State commissions would assign federal support first to carriers who would receive support under existing systems, and distribute remaining support (if any) according to plans adopted by the states and approved by the FCC to ensure consistency with the Telecom Act.

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I. Background

This document proposes an alternative to the plan for distributing federal high cost support to rural areas set forth in the Federal Communication Commission's order of May 8, 1997.[1] This proposal was originally prepared at the request of the Chairman of the Communications Committee of the National Association of Regulatory Commissioners (NARUC). The goal has been to find a method of distributing federal high cost support that could be supported by both high-cost and low-cost states.

At its annual meeting in November, 1997, the National Association of Regulatory Utility Commissioners (NARUC) passed two resolutions regarding high cost funding. The first and more general resolution expressed NARUC's concern that the FCC's interstate universal service fund plan would not sufficiently benefit local ratepayers. NARUC supports the use of the Federal portion of the Universal Service Support Fund exclusively to maintain affordable rates in high cost areas. The resolution encouraged NARUC membership, leadership, and staff to convey these concerns both formally and informally to the FCC, in pending access and universal service dockets, and to request further reconsideration of this portion of their universal service decision.

The second NARUC resolution specifically addressed an earlier draft of this paper. It endorsed the six general principles that are set out below (part III.B). It also urged the FCC to foster dialogue among the Section 254 Federal-State Joint Board, State regulators, the NARUC, the FCC, and their respective staffs and other interested parties toward the goal of resolving the high cost funding dilemma now facing regulators. Finally, it authorized the ad hoc high-cost fund working group that has prepared this paper to bring the described plan, its supporting principles and the underlying analysis to the attention of the FCC, Congress, the Section 254 Federal-State Joint Board, and to other groups, individuals, or organizations through such working group or other means as appropriate.

After the NARUC annual meeting, work continued under the supervision of Chairman Thomas Welch of the Maine Public Utilities Commission and Commissioner Thomas Dunleavy of the New York Public Service Commission. Staff from several states, including Arkansas, Maine, Maryland, New York, Oregon, Vermont and Washington (Ad Hoc Group), have conducted several telephone conferences to develop the proposal described in this paper.

The proposal described below was designed to allow the FCC to meet its statutory obligation to provide sufficient support for high cost areas, but to use no more than the amount

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[1] *Federal-State Joint Board on Universal Service*, CC Docket No. 96-45, Order of May 8, 1997 (Universal Service Order).

of money that the FCC has indicated it would otherwise be willing to raise from the interstate revenues of interstate carriers.

The proposed plan provides sufficient federal support from interstate sources so that each state's average costs, net of that federal support, do not substantially exceed the national average cost. To achieve that objective, support is calculated using the lower of each state's forward-looking or embedded costs. However, no state would receive less than the total amount of support currently received by carriers in that state from the current federal loop and switching support mechanisms. After this federal support is paid to states, individual state commissions will distribute these funds, together with any funds generated through supplemental state programs, to eligible telecommunications carriers. Each state will distribute these funds in accordance with one of several options, each of which would ensure that rates in rural areas are reasonably comparable to rates in urban areas.

The model proposed in this paper is designed to distribute high cost support effectively and fairly for the initial few years of the Telecom Act. As conditions change in the industry, for example when the market share held by competitive LECs has increased, the model may need to be adjusted or replaced.

II. Support For High Cost Areas

1. The Existing Support System

State utility commissions and the Federal Communications Commission (FCC) have separate jurisdiction over telecommunications services. State commissions set rates for intrastate telecommunications services, including local exchange service. The FCC sets rates for interstate services, including interstate toll calls. Telephone company revenues and costs are thus now "separated" into state and interstate components.

The FCC currently provides two mechanisms to support local exchange companies. These federal programs have significant although indirect effects on those companies' intrastate rates, including local service rates.

The first federal program provides loop support to some local exchange carriers with high costs. This high cost support is intended to ensure that local telephone rates are priced within the means of the average subscriber in all areas of the country.[2] About one-half of the country's local exchange companies receive high cost support, and these companies serve about one-fifth of the nation's telephone customers. The amount of high cost support each

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[2] *Amendment of Part 67 of the commission's Rules and Establishment of a Joint Board*, FCC 83-564, CC Docket No. 80-286, Decision and Order adopted December 1, 1983, at paragraphs. 30, 33.

carrier receives is based upon the difference between that carrier's "non-traffic sensitive" cost and the national average cost. These non-traffic sensitive costs consist largely of loop costs, although some switching costs are included. Only carriers with costs greater than 115 percent of the national average cost are eligible for this support. High cost support is reduced substantially for companies serving more than 200,000 lines, a feature that has been strongly criticized by some states. Based on the current rules, the total amount of high cost loop support is $776 million in 1997. High cost support payments are not provided directly as cash payments to qualifying companies but are accomplished through the separations (Part 36) process.[3]

The second federal support mechanism allows local exchange carriers serving fewer than 50,000 lines to multiply the interstate ratio of their "dial equipment minutes of use" by a factor that depends upon the number of lines served by the carrier. This effectively transfers costs from the carriers' state to its interstate jurisdiction, thereby allowing a reduction in the intrastate rates set by state commissions. The total annual amount of this support, which is referred to as "DEM weighting," is estimated at $311 million, of which about $195 million goes to "cost basis" companies.[4]

2. The Telecommunications Act of 1996

The Telecommunications Act of 1996 (Telecom Act) requires the FCC to enact "specific, predictable, and sufficient mechanisms" to protect universal service.[5] These mechanisms must ensure that consumers in all regions of the country, including those in rural, insular, and high cost areas, have access to telecommunications and information services that are "reasonably comparable" to those services provided in urban areas, at rates that are also reasonably comparable to rates charged in urban areas.[6]

Some high cost states have argued that this new language requires a substantial increase in federal support for high cost areas. The argument takes at least three forms:

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[3] Under that process, companies receiving loop support have their intrastate costs reduced (and their interstate costs increased) by the amount of that support.

[4] The most recent information on DEM weighting comes from the 1996 Monitoring Report of the Docket 80-286 Joint Board, and covers the year 1993. Those figures are used here, without adjustment for inflation. The 1993 total of DEM weighting for cost basis companies was $182 million.

[5] 47 U.S.C. § 254(d).

[6] 47 U.S.C. § 254(b)(3).

1. The existing system discriminates in favor of rural customers who are served by small carriers and against rural customers who are served by large carriers.[7] The Telecom Act prohibits continuation of this discrimination.

2. The existing system is based upon a comparison of a carrier's costs with national average costs. However, national average costs are higher than urban costs because costs per line generally decrease as line density increases. The Telecom Act requires that rates in rural areas be "reasonably comparable" to rates in urban areas and also that the spectrum of services available in rural areas be reasonably comparable to urban areas.

3. The fundamental policy goal of the Telecom Act is to promote competition in the local exchange market. Since increasing competition generally drives prices closer to costs, and since many local rate designs today average rates between high-cost and low-cost areas, increased competition in the local exchange market is widely expected to reduce rates in low-cost urban areas. This in turn may drive up local exchange rates in high-cost rural areas, jeopardizing universal service in those areas.

Low cost states, on the other hand, have expressed a desire to set universal service support at the minimum level consistent with the objectives of the Telecom Act, and have asserted that even the support levels necessary to implement the FCC's order of May 8, 1997 would be excessive.[8]

Both low cost and high cost states recognize all states are acting to represent the legitimate concerns of their citizens. Both groups of states desire to work together to achieve the Telecom Act's purposes.

3. The FCC Order

In its May 8 order, the FCC described a plan for support of high cost areas with the following characteristics.

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[7] The current system provides less support for carrier serving more than 200,000 access lines.

[8] These low-cost states have also taken the position that federal support for high cost areas should be drawn from a surcharge on the interstate revenues of interstate carriers, but not from the intrastate revenues of those carriers. The FCC's order of May 8 is consistent with this position.

1. High cost support would be funded by imposing a charge only on interstate revenues of interstate carriers.[9] This makes available a national revenue stream of approximately $65 billion from which to draw support for high cost areas.[10]

2. The FCC would distribute support to any eligible carrier providing service to a customer.[11]

3. The FCC would distribute high cost support based upon the results of a forward-looking cost model.[12] The calculated need for support would be the difference between a carrier's forward-looking cost and a national "benchmark" amount.

4. The FCC would provide 25 percent of the calculated support needed.[13]

5. The FCC would apply federal universal service support to a carrier's revenues in the interstate jurisdiction, in order to reduce the carrier's interstate access charges.[14]

In order to evaluate the impact of the FCC's May 8 order, and to develop an alternative approach, the Ad Hoc Group needed the results from a forward-looking cost model. However, the FCC has not yet adopted a particular model. The Ad Hoc Group first looked to the two leading models, the "Hatfield" model and the "BCPM" model. Each model predicts a total amount of support needed in each area of the country if a particular "benchmark" is set for company revenues.[15] However, the results from Hatfield differ substantially from the results from BCPM, both in overall effect and in estimated costs in particular areas.

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[9] Universal Service Order at paragraph 831.

[10] Previously, the states had disagreed about whether the FCC could or should also impose a surcharge on the approximately $102 billion in the intrastate retail revenue stream.

[11] Universal Service Order at paragraphs 271 et.seq.

[12] *Id.* at paragraph 224-26.

[13] *Id.* at paragraph 269.

[14] *Matter of Access Charge Reform*, CC Docket Nos. 96-262, 94-1, 91-213 & 95-72, First Report and Order, Released May 16, 1997, at paragraph 381. As to rural carriers not under price caps, the FCC also said that these carriers should "continue to apply any revenues received from the modified universal service support mechanism that replace amounts received under the current high cost support system to the accounts to which they are currently applying high cost support." *Id.* at paragraph 385.

15Part of this may be implicit in rates already.

Since a final cost model has not yet been established by the FCC, the Ad Hoc Group created a third or "Blended Cost Model," consisting simply of the mean results from the Hatfield and BCPM models. Using this model, the Ad Hoc Group analyzed the May 8 order and developed an alternative. In the absence of a decision by the FCC selecting a single model, the results should be considered illustrative rather than definitive.

Using the FCC May 8 order's approach and the Blended Cost Model, the total national need for support is $7.8 billion per year. If federal funds were to provide 25 percent of the support needed, the burden of any additional support would fall to the states. The size of that burden varies dramatically from state to state. For example, North Dakota would need to raise and distribute $16.25 per line per month to reach full support. To raise this much money, North Dakota would need to impose a surcharge of 35 percent on its carriers' intrastate revenues.[16] Similarly, other rural states like Idaho, Montana, South Dakota, and Wyoming all would need surcharge rates of more than 20 percent.

By contrast, the District of Columbia would not need to raise any supplemental funds. Other states with large urban populations would need only modest surcharges. California, Massachusetts and New Jersey could each meet their own needs at surcharge rates below 2 percent.

Several high cost states have appealed the FCC's universal service order or sought reconsideration, asserting that the FCC approach of paying only 25 percent of needed support for high costs, and then assigning those funds to the interstate jurisdiction to reduce access rates, is inconsistent with the statutory mandates of providing federal support under section 254 for rural areas. In particular, these states contend that any system that requires some states to pay such a surcharge of 20 percent or more, while allowing other states to impose only nominal surcharges or none at all would fail the statutory test of "reasonably comparable" rates. If the courts should agree with these arguments, the Blended Cost Model suggests that a federal support program of almost $8.0 billion could result.

Low cost states have other concerns. Some are concerned that the establishment of a large federal fund could draw significant funds from their states for the benefit of other states. Such transfers might be particularly difficult for low cost states with substantial low-income populations. Some low cost states are also concerned that establishment of a large federal fund would increase the federal role in the regulation of local telecommunications.

16Part of this may be implicit in rates already.

III. Principles For the Federal High Cost Support Mechanism

1. Overall Objective

The alternative support plan presented in this paper was designed to produce a federal universal service support mechanism that generates as small a fund as possible consistent with the statutory objective of reasonably comparable rates and services. The proposal provides federal support to those high cost states that are unable to generate internally the support necessary to maintain rates in high cost areas that are reasonably comparable to rates in urban areas. These states cannot meet the statutory objectives without receiving outside funds because they do not have within their boundaries enough customers (and accompanying revenue) in low cost areas from which to draw that support. The plan is thus designed to provide support to states with average costs above the national average.

2. Principles

The following principles guided the Ad Hoc Group in development of the proposal.

1. Basic Principles.

The Ad Hoc Group believes that each of the following principles is fully consistent with the Telecom Act.

a. Intrastate Purpose.

The principal purpose of high cost support is to establish conditions that permit states to maintain reasonably comparable intrastate rates, and not to reduce interstate access charges.

b. Sufficiency.

Consumers in rural, insular and high cost areas should have access to a similar spectrum of telecommunications services as consumers in urban areas. These services in rural areas should be available at rates that are reasonably comparable to rates charged for similar services in urban areas. This requires federal support for at least some high cost areas. Support mechanisms must be specific, predictable, and sufficient to allow rates to be affordable.

c. Cost-based.

While the federal law speaks to reasonably comparable rates, the use of costs instead of rates is a more consistent measure of a need for federal support in high cost areas. Rates are influenced by numerous uncontrolled variables, such as differences in the allocation of costs between toll and local services and differences in the size of local calling areas.

d. Separations.

Any support system for high cost areas must reflect and be compatible with the federal rules for jurisdictional separation of costs and revenues.

e. State Authority.

Federal support for high cost areas should be distributed in a way that affords maximum respect to the separation of jurisdictions between the federal and state governments, and in particular to the duty of state commissions to set rates for intrastate telecommunications services.

f. Competitive Neutrality.

Collection and distribution of high cost support should be competitively neutral.

2. Principles Conditionally Supported

The Ad Hoc Group believes the following principles, in conjunction with the basic principles above, and when taken in their entirety, provide a sound basis for addressing the legitimate concerns of consumers in all areas of the country.

a. Interstate Revenues.

Collections for the federal high cost support program should be derived from a charge on the interstate revenues of interstate carriers.

b. Minimum Size.

The federal high cost support program should be as small as possible, consistent with other principles, and its size should be as close to the size of the current federal loop and switch support programs as reasonably practicable.

c. Rural and Non-Rural.

A single federal support program should apply to both rural and non-rural companies, without regard to their size. Also, the same program should apply in both rural and non-rural areas.

d. Loop and Switch.

A single federal support program should replace both the existing federal high cost and DEM weighting programs.[17]

e. Cost Differences Among States.

States differ significantly in their average loop cost. This is primarily due to differences in the mixture of high-cost and low-cost lines. States with a high proportion of high-cost lines tend to be high average cost states, and vice-versa. This tendency is examined in more detail in Appendix A.

f. Rates Comparable Nationally.

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[17] Other support mechanisms, such as "Long Term Support" are not considered here because they do not directly affect intrastate rates.

The Telecom Act requires that rates be "reasonably comparable," not only between urban and rural areas within a single state, but also between urban and rural areas in different states.

g. Use of National Average Costs.

National average costs are about 50 percent above urban average costs.[18] This is an acceptable definition of costs that are "reasonably comparable" to urban costs. This means that if the federal and state support systems could ensure that no carrier must cover net costs above the national average, the system thereby could meet the statutory criterion of "reasonably comparable" rates.[19]

h. Assumed State Effort.

The total amount of federal support for high cost areas can be reduced because the states also bear a portion of responsibility for providing support in their high cost areas and ensuring that rate levels are comparable to those in urban areas throughout the United States. The level of federal support should be sufficient to permit each state to achieve the objective of having rates equal to the overall national average. Thereafter, the states have the burden, with resources drawn from within the state, to ensure that rates in rural and high cost areas are reasonably comparable to urban rates.

i. Separations Effect.

A portion of loop and other costs are presently assigned by Part 36 of the Code of Federal Regulations to the interstate jurisdiction. Therefore, federal support for intrastate rates

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[18] For example, as noted earlier, the Hatfield model reports the average cost within each state by density zone. Three of nine Hatfield zones have a density of 2,550 lines per square mile or more. If "urban areas" are defined as areas with at least 2,550 lines per square mile, the cost under the Hatfield model in such areas appears, nationwide, to be $12.77 per line per month. The Hatfield model also reports the national average cost, in all density zones, to be $20.52 per month. The national average under Hatfield is therefore about 60 percent higher than the urban average.

The BCPM model, version 1.1, produces a similar result. BCPM version 1.1 reports a nationwide average cost of $35.30. Under BCPM there are two density zones (of seven) with a density of more than 2,000 lines per square mile. The average cost in these zones is $24.25. The national average is therefore 46 percent higher than the average.

[19] While this makes it possible to achieve reasonably comparable rates, other conditions would also need to exist. For example, state commissions would have to ensure that federal and state high cost support is actually translated into lower consumer rates. For competitive LECs not subject to rate regulation, the same result would be achieved by market forces.

in high cost states should be reduced by the costs that are otherwise recovered in the federal jurisdiction.[20] This ensures adequate federal support but prevents double recovery.

j. Cost Models.

Federal support of high cost areas should be based upon the lesser of forward-looking or embedded costs. This will ameliorate the tendency of some forward-looking cost models to overstate costs in some areas because of the inaccuracy of modeling customer locations. It will also reduce the overall size of the federal fund.[21]

k. Hold Harmless.

Federal support for a state should not be less than the amount currently received by carriers in that state for any High Cost Support (NTS costs or "loop"costs) plus DEM weighting amounts.[22]

l. State Distribution.

Federal support should be distributed to state commissions. States should then further distribute those funds to Eligible Telecommunication Carriers in a manner that supports universal service in state-identified high cost areas. Distributions should be based on state-performed cost studies meeting minimum criteria established by the FCC and should follow a plan submitted by the state commission and approved by the FCC. States should be permitted to tailor distributions depending on the extent that local exchange competition has actually developed in the state and in conformity with other state policies.

IV. How Does the Proposal Work?

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[20] The 75 percent factor used in the estimates here is an approximation of the composite state separations factor. It is used here for illustrative purposes to determine the approximate size of the federal fund required. The final plan should use each state's individual composite separations factor in lieu of the fixed 75 percent amount. That change would not significantly alter the amount of money allocated to each state nor would it significantly alter the total size of the fund.

[21] The logic supporting the lower of forward-looking or embedded costs is similar to that used to support the FCC's bidding proposal. That is, if bidding is adopted as a method for providing universal service, the winning bid in most areas would likely reflect the lower of the incumbent LEC's embedded costs and a new competitor's forward-looking costs of constructing a new network.

[22] The detailed calculation of hold harmless amounts is described below.

In accordance with the preceding principles, a five part calculation will produce a federal support amount for each state which, in conjunction with state programs, will meet the statutory criterion of reasonably comparable rates. The new plan would take effect, both for rural and non-rural companies, on January 1, 1999.

1. Step 1 - Forward-looking Support

In this step, the average cost in each state is calculated using a forward-looking cost model. Since the BCPM and Hatfield models seem to be the leading contenders for approval, the mean of the outputs from these two models is used (Blended Cost Model).[23] Federal support under Step 1 is set equal to 75 percent[24] of that amount which, if distributed to carriers, would allow the state's net cost to be reduced to the national average.[25]

For example, under the Blended Cost Model, Alabama has an average cost of $37.43 per line per month. This is $9.31 above the national average of $28.12. Alabama's Step 1 support level therefore is $6.98 per line per month, which is 75 percent of $9.31.

By contrast, California has an average cost of $21.94 per line per month. This is below the national average of $28.12. Therefore, California does not receive any support from the Step 1 calculation.

This model calculates smaller support need than when the calculation is performed at the wire center or census block level. The reason is that the calculation here aims only to reduce each state's average cost, not to provide support to each small geographic area within the state that might have high cost. States are free to provide the extra level of support to smaller areas, as authorized by the Telecom Act.[26] States with low average cost, however, will not get federal support, and would have to provide any support for high cost areas from state-generated funds.

23These numbers will change when the FCC adopts a model platform and final input values.

[24] The 75 percent factor used here is an approximation of the composite state separations factor. It is used here for illustrative purposes to determine the approximate size of the federal fund required. It may be desirable in the final plan to use each state's individual composite separations factor in lieu of the fixed 75 percent amount. That change would not dramatically alter the amount of money allocated to each state nor would it dramatically alter the total size of the fund.

[25] The traditional outputs of forward-looking cost models is an amount of "support needed," assuming a particular benchmark. The calculation here disregards this traditional output of the cost models. Rather, the only outputs used are average cost and number of lines.

[26] 47 U.S.C. § 254(f).

2. Step 2 - Embedded Cost Support

The calculation in Step 2 uses the same method as in Step 1, with two exceptions. First, embedded costs are used instead of forward-looking costs.[27] Second, in order to reduce the overall size of the federal support fund, the national cost "threshold" figure has been increased by five percent. In other words, federal support under Step 2 is set equal to 75 percent[28] of that amount which, if distributed to carriers, would allow the state's net cost to be reduced to 105 percent of the national average.

Embedded cost has been included in the plan for two reasons. First, embedded cost is an appropriate limit on forward-looking because it has not yet been demonstrated that forward-looking models are accurate in all cases. Errors can arise from a variety of sources. For example, the models may not be using accurate customer location data. In that sense, embedded costs operate as a check on the validity of the results of forward-looking models. As the models improve over time, the use of embedded costs should be reexamined.

In addition, even if the proxy models were perfect, there are economic reasons to consider embedded costs. Even if the proxy models were perfectly accurate and embedded costs were reported with complete accuracy, in some areas of the country it may be that forward-looking costs are higher than embedded costs.

High forward-looking costs might be found, for example, in an area that has largely depreciated its existing loop plant of buried copper wire. Since labor costs and copper costs have not necessarily decreased since that plant was installed, and since the plant is largely depreciated, construction of replacement plant could have a significantly higher forward-looking cost. For this reason, even after forward-looking models achieve a high level of

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[27] Embedded cost is set equal to the sum of loop, switching and trunking cost. The detailed sources of data for this calculation are described in Appendix B.

In addition, embedded cost could be further adjusted to reflect the cost of any state-supported facilities that function in the same manner as LEC-owned facilities. For example, the cost of a state supported video network for schools might be eligible to be included in embedded costs.

[28] The 75 percent factor used here is an approximation of the composite state separations factor. It is used here for illustrative purposes to determine the approximate size of the federal fund required. It may be desirable in the final plan to use each state's individual composite separations factor in lieu of the fixed 75 percent amount. That change would not dramatically alter the amount of money allocated to each state nor would it dramatically alter the total size of the fund.

accuracy, it may still be appropriate to consider embedded cost figures in calculating federal support for high cost areas.

The most recent available embedded data should be used in each year's support calculation. By using recent data, carriers and state commissions will be guaranteed that whenever a carrier upgrades facilities, new investment will promptly lead to increased federal support.[29] This can be important in areas where existing plant and service is inadequate. State commissions in some cases need as many tools as possible to encourage adequate investment. Indeed, current data on embedded investment may be of sufficient importance to justify using a projected estimate rather than historical data.[30]

3. Step 3 - Lesser of Above

This step calculates the lesser of the results from Step 1 and Step 2.

The effect of this step is to ensure that the forward-looking cost models do not overstate the real need for support in a state. When a state has embedded costs that are lower than the projected forward-looking costs, this could be due to modeling error. Alternatively, embedded costs might be low in that state because of depreciation or for other reasons. In either case, limiting support to the lesser of forward-looking need or embedded need conserves federal financial resources and reduces the likely effect of any errors that might remain in the cost proxy models.

4. Step 4 - Hold Harmless

This step calculates a hold-harmless level for each state. The amount is the sum of three items:[31]

1. The projected High-Cost Support (NTS or "loop" support) to local exchange carriers;
2. DEM weighting for local exchange carriers that report their costs to the FCC;

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[29] This will require the FCC to continue to collect data, such as ARMIS data, on investment and expenses for incumbent LECs.

[30] This could be accomplished in the same manner that estimated costs are now used to set access charges under Part 69 of the FCC's rules. As is true under Part 69, periodic audits and a repayment mechanism would be needed for overpayments that resulted from inaccurate estimates of investment.

[31] A fourth item that was discussed but not specifically endorsed may be worthy of further consideration. Federal support could be used to reimburse the District of Columbia for its extraordinary support of telecommunications relay services related to Gallaudet College.

3. DEM weighting for "average schedule" local exchange carriers that have an average switch size of less than 500 lines.[32]

5. Step 5 - Greater of Above

This step takes the larger of the results from Step 3 and Step 4. The effect is to set the hold-harmless level as the minimum support for each state. This is the final amount of federal support that would be available to ETCs within each state.

6. State Distributions; State Plans

The amount of support calculated in step 5 would be distributed in two portions, a hold-harmless portion and a discretionary portion. To the extent that federal support for the state equals or exceeds the hold-harmless amount, that support would be distributed to eligible telecommunications carriers (ETC). Moreover, each ETC would receive its own share of the federal support, based upon prior federal support to that ETC.[33]

The second part of the distribution would apply to all federal support availa ble to the state above the hold-harmless amount. This discretionary portion could be distributed by USAC to state commissions and then further distributed by state commissions to ETCs. Alternatively, state commissions could exercise a power of appointment over the funds, deciding upon the amounts to be distributed, but relying on USAC to transfer the funds directly to the ETCs.

Each state commission would be required to submit a plan for distribution of federal discretionary support. Each plan would describe the commission's method of distributing federal funds. Commissions should be able to design methods that are specific to that state's needs, so long as the plan meets the statutory goal of ensuring reasonably comparable rates to

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[32] A data analysis performed for the National Telephone Cooperative Association suggests that the switching cost of serving a customer increases significantly when the switch size is less than 500 lines. Therefore, even though a local exchange company may prefer to have its costs calculated on an "average" basis, it may nevertheless have high switching cost if it has, on average, small switches. Overman, Richard, unpublished paper, *see Comments, National Telephone Cooperative Association*, CC Docket 80-286, Oct. 10, 1995.

[33] This support could be transferred directly by the Universal Service Administrative Company to the ETC, pursuant to the commission's directions, or it could be transferred to the commission with the understanding that it would be further distributed to the ETCs.

Support would go to the incumbent LEC on a per line basis. Where a competitive LEC has taken over accounts formerly served by the incumbent, the hold harmless benefits would be portable and would be paid to the competitive LEC.

urban areas.[34] In designing distribution plans, state commissions might want to consider several factors.

1. A state plan might be designed to reflect that service areas and build-out responsibilities for competitive LECs in the state are larger than wire centers, and accordingly require a cost model operating at a geographic scale larger than the wire center.
2. A state plan might be designed to reflect the geographic scale at which incumbent LEC wholesale prices are de-averaged.[35]
3. A state plan might be designed around specific state policy objectives. For example, a state might want to promote investment in parts of a state needing to upgrade the quality of service or physical facilities.

Each plan would also contain assurances necessary to distribute the funds efficiently and to meet federal policy objectives.

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[34] Two methods are described here for purposes of illustration.

Using Method A, the state commission would perform a support calculation for each ETC in the state. The support for each ETC would be based upon the difference between its average cost and a statewide cost threshold. Cost could be determined by a forward-looking cost model, an embedded cost model, or a blend of the two. Therefore, Model A could itself have a number of variants based on different combinations of forward-looking and embedded costs.

This is analogous to the method that the FCC would use to calculate support for the state as a whole, but with the difference that the state would adjust the statewide threshold cost parameter to ensure the distribution of all high cost funds, both state and federal, that are likely to be available. The total amount distributed would consist of federal hold-harmless support, federal discretionary support and any funds raised by the state.

Using Method B, as in Method A, the state commission would perform a support calculation for each ETC in the state, and once again the support for each ETC would be based upon the difference between its average cost and a statewide cost threshold. Each ETC would receive 100 percent of its hold-harmless amount plus a pro-rata portion of its other support need. The pro-rata portion would be the same for all ETCs in that state in a given year. As with Method A, the total amount distributed would consist of federal hold-harmless support, federal discretionary support and any funds raised by the state.

[35] For example, if a state has established three pricing zones for resale of services available from its regional Bell operating company, it might decide to establish the same three zones for calculation of high cost support.

1. The plan would state that the commission has authority under state law to distribute federal discretionary high cost support.[36]
2. The plan would state whether the commission prefers to receive title to the funds or to have a power of appointment for the funds. If the commission prefers title, the plan should also describe whether the commission prefers to use a third party administrator to receive and account for federal support, and if so, should name that administrator.
3. The plan would state that distributions of federal funds will be made only to ETCs for the purpose of defraying high local rates for universal service[37] in high cost, rural and insular areas.

The FCC would review state plans for distribution of federal funds. The FCC would require that such plans advance the objectives of section 254 of the Telecom Act, including the requirement that rates and service in rural areas be reasonably comparable to those in urban areas. State plans would also need to be competitively neutral,[38] and should also ensure that each ETC receives an amount of federal support at least equal to the hold-harmless portion that ETC has generated.

7. Individual Income Factors

Average income might be used to adjust federal support levels. Support might be increased, for example, in states with a high incidence of poverty or states with a low average income. Low income ratepayers in many cases may also live in low cost areas, thus creating the appearance that poor individuals in low-cost areas are being required to subsidize rich individuals in high-cost areas. While using an income-based test may warrant further study, for the reasons discussed below, no income factor has been included in this proposal.

First, by collecting funds from interstate revenues, federal support will be raised in a progressive manner. This is because customers who use a high volume of interstate services will contribute proportionately more to the fund. These are generally business customers and

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[36] The FCC might want to seek public comment on whether state commissions will require legislative authority to distribute federal funds in this manner. Some commissions may conclude that they presently have authority to so act, either under the Telecom Act or under existing state law. Others may need or may desire to seek explicit state statutory authority.

[37] The elements of service required to be supported are defined in 47 U.S.C. § 54.101.

[38] The competitive neutrality requirement might require that carrier support be "portable."

higher income residential customers. It is unlikely, therefore, that low-income individuals, even in low-cost states, would be significantly burdened by this proposal.[39]

Moreover, high cost support is only one part of the program supported by the FCC's universal service mechanisms. Support for schools and libraries and support for the lifeline and link-up programs are specifically targeted to the needs of the educational and low-income communities. Indeed, much of the support under these programs flows to low-cost areas.

8. Subsequent Years

It was noted above that the most recent possible embedded data should be used in each year's support calculation. Indeed, it may be that the data should be so fresh that they should be estimated for the upcoming year.[40]

In addition, hold-harmless calculations should be updated annually. This will ensure that legitimate transactions now in progress will be reflected in the hold-harmless base. For example, although the FCC has forbidden further increases of high cost support through sale of exchanges to small companies,[41] some such sales have already been completed. It would be unfair to the carriers and customers in these states if the effects of completed and allowed telephone exchange sales were to be ignored in the hold-harmless calculation.[42]

9. Lifetime of the Plan

For a number of reasons, this model should be considered an interim solution. This is due in part to limitations in the model, and due in part to expected developments in the telecommunications industry.

The model includes embedded cost as a primary factor affecting the distribution of federal support. As facilities-based competition progresses, more and more investment will be made by competitive LECS. Competitive LECs do not, however, report their costs to the FCC, and these costs cannot be added to those filed by incumbent LECs. As facilities-based

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[39] Moreover, as a practical matter, so long as the high cost support is funded by a surcharge on a class of service (i.e., "interstate") it would be impractical if not impossible to exclude contribution from low-income individuals who happened to use that class of service.

[40] As noted above, an auditing provision would also be needed. See footnote 30, above.

[41] This prohibition applies unless a carrier made a binding commitment before May 7, 1997 to purchase an exchange. Universal Service Order, ¶ 308.

[42] This will require the FCC to continue to recalculate support under the existing system as though that system were still in effect. In particular, the FCC will have to calculate both high cost support and DEM weighting as though this plan had not been adopted.

competitive LECs acquire a larger share of the local exchange market, their investment may become a significant share of the total investment in the public switched network. In that event, embedded cost data will increasingly understate total net investment, and any model that relies on average embedded cost in each state can become less reliable. When reported investment decreases to 70 or 80 percent of the total network, this model may need to be replaced, possibly by a bidding process.[43]

The model also includes, in Step 4, a hold-harmless calculation. Because of the methods that the FCC has used in the past to distribute federal support, this hold-harmless guarantee is primarily of benefit to smaller incumbent LECs. Many of these companies are rural telephone companies and are entitled to separate treatment under applicable FCC orders. To date, the FCC has not indicated any clear intent to reduce substantially the support for these companies and has left this question to subsequent rulemaking.[44] Nevertheless, after the passage of several years, policy makers might attach reduced importance to sustaining the hold-harmless expectation indefinitely.

The telecommunications market itself may also evolve in unexpected ways. This could invalidate some of the assumptions underlying the FCC's current policy on high cost areas and could equally invalidate the assumptions underlying this model. For example, the FCC requires that high cost support be calculated on a fine geographic basis no larger than the wire center.[45] This presupposes that competitive LECs will be free in each state to offer their service areas on a fine geographic scale and also presupposes that resale rates will be de-averaged at a similar scale. As states implement the Telecom Act over the next several years,

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[43] The model bases support distributions for some states on the difference between the state's embedded average cost and the national average cost. Therefore, to the extent that a particular data error applies equally to all states, it could have a negligible effect on the distribution. However, at some time in the future, facilities-based competitive LECs may have so many lines that the embedded cost per line data from incumbent LECs will no longer represent a fair sample of the lines in the state. At that time the reported embedded investment would no longer be a reliable indicator of cost.

[44] The FCC has stated an intention to establish a forward-looking economic cost mechanism for rural carriers. Universal Service Order, ¶ 252. The FCC also has stated that it will not base distributions to rural carriers on forward-looking cost until further review. *Id.* at ¶ 203. However, the FCC has also stated that it intends to pay only 25 percent of the cost of support, *Id.* at ¶ 269, and this presumably applies to both rural and non-rural carriers.

[45] Universal Service Order, ¶ 250(10).